Claims

What is claimed is:

1. A Method and System for personalized and localized TV ad delivery, comprising:

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Ad Center (1),

Intelligent Control Module (2), and

Display (3) and / or TV (4);

10   Ad Center (1) interfaces with Intelligent Control Module (2); Intelligent Control Module (2)

interfaces with Display (3) and / or TV (4). Delivery of TV ads and / or program content

through Display (3) and / or TV (4) is via Intelligent Control Module (2);

Ad Center (1) collects and processes information for ads, ad agencies, advertisers, and TV

15   users and sends the information, based on an ad and user's personal and local attributes, to

the matched Intelligent Control Modules (2), which then deliver personalized and localized

ads on Display (3) or TV (4) during TV commercial times;

Intelligent Control Module (2) is capable of multi-directional communication with Ad Center

20   (1) and / or TV Service providers, has multiple connectors, through which users can follow-

up and search for ad information.

2. A system in accordance with claim 1, wherein Ad Center (1) further comprises:

25   Receiving Unit (1-1): receives TV channels and programs and / or ad content from satellite

TV providers, and / or cable TV Providers, and / or TV stations, and / or terrestrial TV

providers, and / or Internet TV providers, and / or IPTV;

Repository Unit (1-2): stores advertiser or ad agency information, ad information, and user

30   information. User information includes intelligent control module (2)'s access card

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information, localization information, user attributes, and / or user viewing patterns and ad preferences collected by intelligent control modules (2);

Ad Database (1-3): stores all the ads and /or expired ad information. In addition, it contains

5   related ad follow-up information that provides additional and more detailed video or data information for the applicable ads;

Ad Output Decision Making Unit (1-4): performs data processing and decision making based on ad attributes and user attributes that are associated with each intelligent control module (2).

10   It decides the appropriate ad set that might be applicable for each intelligent control module (2); and / or, with each intelligent control module's viewing patterns and ad preferences, decides user personalized and localized ad schedule;

Input / Output Unit (1-5): handles communication with Intelligent Control Module (2), and /

15   or external sources, including distribution of ad sets, and / or ad schedules to Intelligent Control Modules (2) upon generation of user directed ad sets and / or user personalized and localized ad schedules by Ad Output Decision Making Unit (1-4), user information from the Repository Unit (1-2) to Intelligent Control Modules (2), receipt of user requests, and / or transmission of upload information on user viewing patterns and / or ad preferences from

20   Intelligent Control Modules (2), etc;

Ad Control Unit (1-6): controls and monitors all units, components, and their operations inside the Ad Center (1), in addition, processes and dispatches information and requests and controls software updates for Intelligent Control Modules (2).

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3. A system in accordance with claim 1 or 2, wherein:

Ad Center (1) is Terrestrial TV Service Providers, and / or Cable TV Providers, and / or Satellite TV providers, and / or Internet TV service providers, and / or Internet Protocol (IP)

30   TV Service providers, and / or independent content service providers; or it can be affiliated

with these TV and / or content service providers; or it can be an independent personalized and localized Ad service provider with interfaces to these TV and / or content service providers;

5   Intelligent Control Module (2) is an independent module integrated with TV (4) and / or TV Set-top box, and / or Display (3), and / or computer; or it is an autonomous device that lives outside of TV (4), Display (3), Set-top box, and computer.

4. A system in accordance claim 1, wherein intelligent control module (2) further comprises:

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Ad Decision Support Unit (2-1): determines user personalized and localized ad schedules pertaining to channels and time, and collects user viewing patterns, which is based on intelligent programs (Artificial Intelligent (AI) based rules engine and business rules, mathematical and statistic derivations) and event-driven triggering mechanism; expert

15   business rules and mathematical and statistic models are established on user and ad attributes information, including viewing patterns and user ad preferences;

Ad Repository Unit (2-2): stores personalizable and localizable ads and / or all other normal ads (ads without personalizable and localizable attributes), which are updated in real-time by

20   Ad Center (1), and removed in real-time based on their expiration attributes;

Control Unit (2-3): controls and monitors all units, components, and operations within the intelligent control module (2), it also detects TV commercial times for showing of personalized and localized ads based on ad schedule generated by Ad Decision Support Unit

25   (2-1) through a pre-configured ad channel or the current program channel, additionally, if a channel and / or a certain period of time does not have personalizable or localizable ads and / or ad schedule not generated, this control unit will show the normal ads directly carried by the appropriate TV service providers;

User Information Unit (2-4): stores user attributes information, which is updated through Ad Center (1)'s Repository Unit, it also stores user viewing patterns collected by the Ad Decision Support Unit (2-1) and ad preferences set up by the user;

5   Ad Follow-Up Unit (2-5): used to follow up ads for additional or more detailed video and / or data info in real-time or at a later time;

Ad Preference Setup Unit (2-6): helps users to setup their ad preferences for a certain period of time, which are used by the Ad Decision Support Unit (2-1) to generate the appropriate

10   personalized and localized ad schedule; Ad preferences can be based on ad classifications implied by ad attributes, shopping plan for a certain period, additionally and if applicable, users can also setup their ad preferences through the account management system provided by the applicable TV Service Providers;

15   Ad Search Unit (2-7): search and browse ad with ad attributes and keywords;

Input / Output Unit (2-8): used for transmitting input and output information (video, data, etc.) with other interfaces, including Ad Center (1), and / or TV service providers, and / or Displays (3), and / or TV (4), and / or internet;

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Remote Control Unit (2-9): used by users to control functions supported by the intelligent control module (2), like Ad follow-up (2-5), ad preference setup (2-6), ad search (2-7).

5. A method for personalized and localized TV Ad delivery, wherein:

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said delivery method includes processes for setting up the said system in claim 1, 2, 3, and 4.

6. A method in accordance with claim 5, wherein:

30   personalized and localized TV Ad delivery further comprises ad follow-up and ad search

methods supported by Ad Follow-Up Unit (2-5) and Ad Search Unit (2-7) respectively
through the Intelligent Control Module (2), for users to follow-up and / or search interested
ad(s); ad follow-up and / or ad search can be performed with one of the three paths, with key
presses on the intelligent control module (2);

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First Path: if the Ad Repository (2-2) contains additional or more detailed video and / or data
information for the interested ad(s), ad follow-up and / or search can be performed directly
against the Ad Repository (2-2) inside the Intelligent Control Modules (2), follow-up details
about the advertised product or service will be shown through Display (3) or TV (4) to users;

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Second Path: ad follow-up or ad search requests sent through the Input / Output Unit (2-8) to
the Ad Center (1), which will trigger ad follow-up and / or search in the Ad Database (1-3)
and transmit the matching results back to the Intelligent Control Modules (2) (requester) for
viewing, additionally, per agreement with users, and / or ad agencies, and / or advertisers,

15   and / or TV service providers, expired, and / or similar ads, and / or their follow-up details
can also be followed up, searched and transmitted back;

Third Path: ad follow-up or ad search request is sent through the internet connection port on
the Intelligent Control Modules (2) and performed directly over the internet.

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7. A method in accordance with claim 6, wherein:

second path for ad follow-up and / or ad search consists of the following process: Control
Unit (1-6) first searches the Ad Database (1-3) for the requested information; and / or search

25   the advertiser's web or information center for additional video or data information; and / or
provides the ad follow-up or search requester with a number of (pre-set) follow-up ads, and /
or similar ads, and / or internet web sites for the requester to click to enter the sites.

8. A method in accordance with claim 5, wherein:

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Intelligent Control Module (2) generates the user personalized and localized ad schedule via the ad decision support unit (2-1), specific to channels and time; the Control Unit (2-3) takes the ad schedule and plays the recommended ads during TV commercial times; triggering of the intelligent programs within the Ad Decision Support Unit (2-1) is event-based, like

5   addition of a new ad, removal of an expired ad, changes to a user attributes, and etc; said business rules, mathematical and statistic models are based on user attributes, ad attributes, and /or user viewing patterns, and / or user ad preference setup, and / or local laws and regulations.

10   9. A method of claim 5, wherein

said Ad Center (1)'s Ad Output Decision Unit (1-4) performs personalization and localization processing, based on ad and user attributes, to determine applicable ad set to be transmitted to user's Intelligent Control Modules (2) and / or, if user viewing patterns and ad

15   preference are available, to determine ad schedules pertaining to users, channels, and time;

user attributes includes user's age group, profession, location properties, account and service information, program preference, and / or viewing patterns, habits and ad preferences, and public and / or purchasable user information like demographic data, user credit info,

20   household information, etc; if user's a merchant, user information may also include merchant categories and attributes;

ad attributes include the common ad properties like ad agency or advertiser info, ad effective period, target channel, target time, etc, it also includes the dynamic ad information supported

25   by the present invention like targeted user attributes, follow-up ad information, related video and advertiser data information;

all these attributes are collected and processed by Intelligent Control Module (2)'s Ad Decision Support Unit (2-1), and / or Ad Center (1)'s ad Output Decision Support Unit (1-4)

30   to determine user personalized and localized ad schedules and / or applicable ad set.

10. A method in accordance with claim 5, wherein:

said Ad Center (1) and Intelligent Control Module (2) communicates and exchanges

5   information in real-time with event-driven mechanism via their respective input / output units

(1-5) (2-8) to determine user applicable and personalized and localized ad sets and / or ad

schedules; if the intelligent control module at the user end is "on", addition, change, and

removal of ads, user information will trigger execution of ad decision support unit (2-1) and /

or ad output decision support unit (1-4) to generate new user personalized and localized ad

10   schedules, and new / changed ads and / or ad schedules transmitted to the targeted user's Ad

Repository (2-2) and / or User Info unit (2-4);

software programs inside the Intelligent Control Unit (2), including their interfaces (user and

/ or system), can be updated partially or entirely by the Ad Center (1)'s control unit (1-6).